

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-117 (Cancelled).

Claim 118. (New) A method for managing electronic communications within a computer network, the electronic communications compliant with Internet Protocol (IP) standards, comprising the steps of:

assigning a unique identifier to a source node, the unique identifier identifying at least one of a user identification (UID) and a system identification (SID), wherein the UID uniquely identifies a specific, authorized user of the source node, wherein the SID is constant and uniquely identifies a specific computing device of the source node, and wherein the SID is not an IP address assigned to the computing device;

inserting the unique identifier assigned to the source node into an IP packet originated by the source node as part of a communication attempt by the source node with a destination node; and

thereafter:

intercepting the IP packet transmitted by the source node before it reaches the destination node;

extracting the unique identifier from the IP packet; and

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

permitting the communication attempt by the source node with the destination node as a function of the unique identifier extracted from the IP packet.

Claim 119. (New) The method of claim 118, wherein the step of permitting the communication attempt by the source node with the destination node includes forwarding the IP packet to the destination node.

Claim 120. (New) The method of claim 118, wherein the IP packet is a SYN packet of a TCP/IP communication.

Claim 121. (New) The method of claim 120, wherein the unique identifier is inserted into a header of the SYN packet.

Claim 122. (New) The method of claim 121, wherein the unique identifier is inserted into the TCP header of the SYN packet.

Claim 123. (New) The method of claim 122, wherein the unique identifier is inserted into the sequence number field of the TCP header.

Claim 124. (New) The method of claim 122, wherein the unique identifier is inserted into the acknowledgement number field of the TCP header.

Claim 125. (New) The method of claim 118, wherein the IP packet is a UDP packet that is part of a UDP communication and wherein the unique identifier is inserted into the UDP packet.

Claim 126. (New) The method of claim 118 further comprising the step of recording an unauthorized communication attempt from the source node.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 127. (New) The method of claim 118 further comprising the step of notifying a network administrator of an unauthorized communication attempt from the source node.

Claim 128. (New) The method of claim 118 further comprising the step of logging the communication attempt from the source node to the destination node.

Claim 129. (New) The method of claim 118 further comprising the step of encrypting the unique identifier before inserting the unique identifier into the IP packet.

Claim 130. (New) The method of claim 129 further comprising the step of decrypting the unique identifier after intercepting the IP packet.

Claim 131. (New) The method of claim 129, wherein the unique identifier is encrypted using at least one transformation key.

Claim 132. (New) The method of claim 131, wherein the transformation key is selected dynamically from a table of transformation keys.

Claim 133. (New) The method of claim 132, wherein each transformation key in the table has an associated key index number, and further comprising the step of including the key index number of the transformation key used to encrypt the unique identifier in the IP packet.

Claim 134. (New) The method of claim 133 further comprising the steps of obtaining the key index number from the IP packet, identifying the transformation key associated with the key index number, and decrypting the unique identifier using the identified transformation key.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 135. (New) The method of claim 118, wherein the source node is permitted to communicate with the destination node if the unique identifier matches one of a plurality of authorized identifiers associated with the destination node.

Claim 136. (New) The method of claim 118, wherein the unique identifier identifies both the UID and the SID and wherein the source node is permitted to communicate with the destination node if both the UID and the SID are authorized to communicate with the destination node.

Claim 137. (New) The method of claim 118, wherein the source node is not permitted to communicate with the destination node if the unique identifier is not included within the IP packet.

Claim 138. (New) The method of claim 118, wherein the step of inserting the unique identifier of the source node into the IP packet does not require any superfluous IP packets to be sent as part of the communication attempt.

Claim 139. (New) The method of claim 118, wherein the step of inserting the unique identifier into the IP packet modifies the IP packet from its original state and further comprising the step of reforming the IP packet to its original state after extracting the unique identifier from the IP packet.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 140. (New) A method of monitoring electronic communications between a source node and a destination node within a computer network, the electronic communications compliant with Internet Protocol (IP) standards, comprising the steps of:

assigning a unique and non-IP address identifier to the source node;

inserting the identifier assigned to the source node into a standard field of an IP packet, the IP packet being originated by the source node as part of an electronic communication with the destination node;

intercepting the IP packet transmitted by the source node before it reaches the destination node;

extracting the identifier from the IP packet; and

thereafter:

logging the identifier extracted from the IP packet in a database;
and

forwarding the IP packet to the destination node.

Claim 141. (New) The method of claim 140 wherein the identifier identifies at least one of a user identification (UID) and a system identification (SID), wherein the UID uniquely identifies a specific, authorized user of the source node and wherein the SID is constant and uniquely identifies a specific computing device of the source node.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 142. (New) The method of claim 141, wherein the identifier identifies both the UID and the SID and further comprising the steps of comparing the UID with a plurality of authorized UIDs associated with the destination node, comparing the SID with a plurality of authorized SIDs associated with the destination node, and taking further action based on the comparisons.

Claim 143. (New) The method of claim 140, wherein the step of inserting the identifier of the source node into the IP packet does not require any superfluous IP packets to be sent as part of the electronic communication.

Claim 144. (New) The method of claim 140, wherein the step of inserting the identifier into the standard field of the IP packet includes adding the identifier to additional information contained in the standard field.

Claim 145. (New) The method of claim 140, wherein the step of inserting the identifier into the standard field of the IP packet includes replacing information in the standard field with the identifier.

Claim 146. (New) The method of claim 140, wherein the IP packet is a SYN packet of a TCP/IP communication.

Claim 147. (New) The method of claim 146, wherein the identifier is inserted into a header of the SYN packet.

Claim 148. (New) The method of claim 147, wherein the header is the TCP header of the SYN packet.

Claim 149. (New) The method of claim 148, wherein the standard field is the sequence number field of the TCP header.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 150. (New) The method of claim 148, wherein the standard field is the acknowledgement number field of the TCP header.

Claim 151. (New) The method of claim 147, wherein the header is the IP header of the SYN packet.

Claim 152. (New) The method of claim 140, wherein the IP packet is a UDP packet that is part of a UDP communication and wherein the identifier is inserted into the UDP packet.

Claim 153. (New) The method of claim 140 further comprising the step of encrypting the identifier before inserting the identifier into the IP packet.

Claim 154. (New) The method of claim 153 further comprising the step of decrypting the identifier after intercepting the IP packet.

Claim 155. (New) The method of claim 153, wherein the identifier is encrypted using at least one transformation key.

Claim 156. (New) The method of claim 155, wherein the transformation key is selected dynamically from a table of transformation keys.

Claim 157. (New) The method of claim 156, wherein each transformation key in the table has an associated key index number, and further comprising the step of including the key index number of the transformation key used to encrypt the identifier in the IP packet.

Claim 158. (New) The method of claim 157 further comprising the steps of obtaining the key index number from the IP packet, identifying the transformation key associated with the key index number, and decrypting the identifier using the identified transformation key.

Appl. No. 10/065,775
Amdt. dated July 21, 2006
Reply to Office Action of April 21, 2006

Claim 159. (New) The method of claim 140 wherein the step of logging the identifier further comprises the step of logging a portion of the electronic communication from the source node to the destination node in the database in association with the identifier.

Claim 160. (New) The method of claim 140 wherein the step of logging the identifier further comprises the step of logging the IP packet from the source node to the destination node in the database in association with the identifier.

Claim 161. (New) The method of claim 140 further comprising the step of notifying a network administrator of the electronic communication from the source node to the destination node.

Claim 162. (New) The method of claim 140 further comprising the step of comparing the identifier with a plurality of authorized identifiers associated with the destination node.